What does EasyStart do and how does it work?

1. *How an A/C compressor motor normally starts:*

When power is first applied to the motor it creates a magnetic field that presses against a rotor to start it spinning. The rotor is connected to the compressor and these components have mass so it takes time and energy to get up to speed.

Compressor motors are designed to normally draw as much energy as needed to get up to speed quickly. This means under normal conditions, the motor will draw a large surge of current when it starts up.

The amount of current draw is specific to each type of motor, and this specification is called Locked Rotor Amps, or *LRA*. This is the maximum current the motor will draw as designed by the manufacturer. During a normal start, your compressor will draw this current from the supply. Or try to.

An RV rooftop 16 KBTU compressor is rated around 50 to 60 amps LRA. A typical 2000 watt inverter generator is rated at 2000 watts peak which is about 16.7 amps at 120 volts AC. There is *no way* the generator will start a load that draws four to five times its peak rating!

2. *How the EasyStart Soft Starter resolves this:*

The solution is to reduce the peak LRA and this is what the EasyStart soft starter does. EasyStart is connected directly to the compressor motor and reduces the power surge that occurs on start. How? It does so by controlling the power supplied to the windings of the motor on each AC cycle. EasyStart gradually increases the current until the compressor is running at full speed.

Reducing the motor's current draw increases the time it takes for it to get up to speed, creating a very smooth start that reduces the peak current by 50 to 70%. An RV rooftop 16 KBTU, 120-volt compressor can now start with *under 20 amps* of current.

With home and marine air conditioning units, the numbers are slightly different but the soft starter works the same exact way.